## REMARKS/ARGUMENTS

In the present Office action, claims 1-23 were rejected. Applicants have thoroughly reviewed the outstanding Office action including the Examiner's remarks and the references cited therein. Claims 1, 4, 7, 8, 11, 16, 19 and 22 have been amended. The following remarks are believed to be fully responsive to the Office action. All the pending claims at issue are believed to be patentable over the cited references.

## CLAIM REJECTIONS – 35 U.S.C. § 102(b)

Claims 1, 2, 6, 9, 11, 13, 18 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,648,038 ("the Fathi patent").

Initially, Applicants note that it is axiomatic that to qualify as anticipation under Section 102, the cited reference must "bear within its four corners adequate directions for the practice of the patent invalidated." *See, e.g., Dewey & Almay Chemical Co. v. Mimex Co., Inc.*, 52 U.S.P.Q. 138 (2d Cir. 1942). Applicants respectfully submit that the Fathi patent embodies no such directions.

Regarding claim 1, the Fathi patent does not teach or disclose the combination found in the presently amended claim. The Applicants respectfully argue that the Examiner's rejection should be withdrawn in light of the presently presented amendment. The Fathi patent does not teach at least "thickness measurement system for measuring a film thickness of a sample, comprising[] an electromagnetic cavity resonator having an exposed side adapted to contact a portion of the surface of the sample; [or] a correlating algorithm correlating a resonant frequency shift detected by the amplitude detector to a surface the film thickness of the portion of the surface of the sample being measured, wherein during the measurement the exposed side of the cavity resonator is held against the portion of the surface of the sample."

In contrast, the Fathi patent discloses a system for monitoring a workpiece using microwave energy comprising a chamber, including means for generating variable frequency microwave energy, means for positioning a workpiece within the chamber, means for subjecting the workpiece to a plurality of different microwave frequencies, and means for monitoring a characteristic of the workpiece. (*See* Fathi, col. 2, lines 5-11.) Thus, the Examiner's rejection of independent claim 1 under 35 U.S.C. § 102(b) as being anticipated by the Fathi patent should be withdrawn in light of the preceding.[1]

Claims 2-10 are dependant on claim 1 which is believed to be in condition for allowance. Therefore, claims 2-10 are patentable at least by virtue of their dependency on claim 1. Thus, the Applicants request that the rejection of dependant claims 2, 6 and 9 under 35 U.S.C. § 102(b) as being anticipated by the Fathi patent be withdrawn in light of the presently amended claim 1.

Regarding claim 11, the Fathi patent does not teach or disclose the combination found in the presently amended claim. The Applicants respectfully argue that the Fathi patent does not teach at least a "thickness measurement system for measurement of a film thickness of a sample, comprising[] a resonating means for resonating an electromagnetic signal, having an exposed side adapted to contact a portion of the surface of the sample; correlating means for correlating a resonant frequency shift detected by the detecting means to a surface the film thickness of the portion of the surface of the sample being measured; [or] affixing means for pressing the exposed side of the resonating means against the portion of the surface of the sample."

In contrast, the Fathi patent discloses a system for monitoring a workpiece using microwave energy comprising a chamber, including means for generating variable frequency microwave energy, means for positioning a workpiece within the chamber, means for subjecting the workpiece to a plurality of different microwave frequencies, and means for monitoring a

[1] With reference to the November 21, 2005 conference between the Applicants' representatives and the Examiner, the Applicants would further note that U.S. Patent Number 6,184,694 to Anderson *et al.* does not teach "a signal decoupler coupled to the cavity resonator," and thus does not contain all of the elements found in claim 1.

characteristic of the workpiece. (*See* Fathi, col. 2, lines 5-11.) Thus, the Examiner's rejection of independent claim 11 under 35 U.S.C. § 102(b) as being anticipated by the Fathi patent should be withdrawn in light of the preceding.

Claims 12-21 are either directly or indirectly dependant on claim 11 which is believed to be in condition for allowance. Therefore, claims 12-21 are patentable at least by virtue of their dependency on claim 11. Thus, the Applicants request that the rejection of dependant claims 13, 18 and 20 under 35 U.S.C. § 102(b) as being anticipated by the Fathi patent be withdrawn in light of the presently amended claim 11.[2]

**CLAIM REJECTIONS – 35 U.S.C. § 103(a)**

Claims 3, 5, 7, 10, 12, 15, 17 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent as applied above in view of U.S. Patent No. 6,359,446 ("the Little patent"). Claims 4 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent as applied above in view of U.S. Patent No. 5,563,505 ("the Dorothy patent"). Claim 14 stands rejected under 35 U.S.C.§ 103(a) as being unpatentable over the Fathi patent as applied above in view of the Little patent and the Electrical Engineering Dictionary reference provided with the Office action. Claims 22 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,184,694 (the Anderson patent) in view of Little and Fathi.

The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. *MPEP* § 2142. To establish a prima facie case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, to modify the references or to

[2] Here again, with reference to the November 21, 2005 conference between the Applicants' representatives and the Examiner, the Applicants would further note that U.S. Patent Number 6,184,694 to Anderson *et al.* does not teach "a decoupler means for decoupling signals from the resonating means," and thus does not contain all of the elements found in claim 11.

combine reference teachings. Second, there must be reasonable expectation of success. Finally, the prior art must teach all the claim limitations. *MPEP* § 2142.

As noted above, the Applicants observe that claims 2-10 are dependant on claim 1, which is believed to be in condition for allowance in light of the above amendment. Therefore, claims 3, 5, 7, and 10 are allowable at least by reason of their ultimate dependency on claim 1. Thus, the Applicants request that the rejection of dependant claims 3, 5, 7 and 10 under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent in view of the Little patent be withdrawn in light of the presently amended claim 1.

Similarly, claim 4 is allowable at least by reason of its dependency on claim 1. Thus, the Applicants request that the rejection of dependant claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent in view of the Dorothy patent be withdrawn in light of the presently amended claim 1.

In addition, as noted above, the Applicants observe that claims 12-21 are dependant on claim 11, which is believed to be in condition for allowance in light of the above amendment. Therefore, claims 12, 15, 17, and 19 are allowable at least by reason of their ultimate dependency on claim 1. Thus, the Applicants request that the rejection of dependant claims 12, 15, 17, and 19 under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent in view of the Little patent be withdrawn in light of the presently amended claim 11.

Similarly, claim 16 is allowable at least by reason of its dependency on claim 11. Thus, the Applicants request that the rejection of dependant claim 16 under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent in view of the Dorothy patent be withdrawn in light of the presently amended claim 11.

Likewise, claim 14 is allowable at least by reason of its dependency on claim 11. Thus, the Applicants request that the rejection of dependant claim 14 under 35 U.S.C. § 103(a) as being unpatentable over the Fathi patent in view of the Little patent and the Electrical Engineering Dictionary reference be withdrawn in light of the presently amended claim 11.

Regarding claim 22, the Anderson, Little, and Fathi patents, either alone or in combination do not teach or disclose the combination found in the presently amended claim. In particular, the Applicants respectfully argue that Fathi does not teach "determining the thickness of the film [on a portion of the surface of a sample] from a correlation of a shift of the resonant frequency." In contrast, the Fathi patent is directed toward measuring volumetric properties of a workpiece placed inside a cavity. (*See* Fathi, col. 1, line 53-67; col. 2, line 9.)

Furthermore, the Applicants argue that the Office action does not demonstrate any suggestion or motivation to modify the references or to combine reference teachings found in Anderson, Little, and Fathi. Anderson is directed toward a portable paint thickness gauge for composite materials using resonant cavities at X-band. Little is directed toward detecting, inter alia, thickness changes of a sample. Fathi, however, is directed toward measuring volumetric properties of a workpiece placed inside a cavity. (*See* Fathi, col. 1, line 53-67; col. 2, line 9.) The Office action does not demonstrate suggestion or motivation to modify Anderson or Little (which deal with measurement of thicknesses) to include the teachings of Fathi (which deals with the measurement of volumetric properties).

Moreover, the Applicants note that the final paragraph of page 9 is cut off, further leading credence to their argument that the Office action does not demonstrate suggestion or motivation to modify the references or to combine the teachings found in the art cited. In addition, the need to rely on more than two references tends to negate obviousness. Thus, for at least the reasons cited above, the Applicants respectfully request that the rejection to claim 22 under 35 U.S.C. §103(a) as being unpatentable over the Anderson patent in view of Little and Fathi be withdrawn.

Finally, the Applicants observe that claim 23 is dependant on claim 22, which is believed to be in condition for allowance in light of the above arguments. Therefore, claim 23 is allowable at least by reason of its dependency on claim 1. Thus, the Applicants request that the rejection of dependant claim 23 under 35 U.S.C. §103(a) as being unpatentable over the

Anderson patent in view of Little and Fathi be withdrawn in light of the presently amended claim 22.

## CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. If it is believed that the application is not in condition for allowance the Examiner is requested to contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to Attorney Docket No. 05165.1280.

Respectfully submitted,

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